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10/549,576	11/17/2006	Thomas Buchberger	R.304929	1291

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RONALD E. GREIGG
GREIGG & GREIGG P.L.L.C.
1423 POWHATAN STREET, UNIT ONE
ALEXANDRIA, VA 22314

EXAMINER	
CHAUDRY, ATIF H	

ART UNIT	PAPER NUMBER
3753	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/549,576	BUCHBERGER ET AL.	
	Examiner	Art Unit	
	ATIF H. CHAUDRY	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22,23,25-27,29-35 and 37-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22,23,25-27,29-35 and 37-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Status of the claims

Applicant's amendment as filed on 06/16/2010 has been entered. Claims 22, 31, 44, 45 are amended. Currently claims 22, 23, 25-27, 29-35, 37-45 are pending in this application.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claim 22, 23, 25, 29-31, 33-35, 44, 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirota et al (US Pat 6314753) in view of Cadman et al. (US Patent 2498482) further in view of Fountain-Barber (US Patent 3199533).

4. Hirota et al. (Fig. 2) discloses a pressure limiting valve consisting of a single piece valve holder 20, a single piece valve insert 12 connected to the valve holder 20, a

single piece valve piston (portion of 14 sliding within the smaller diameter portion of valve insert 12) supported slidably in the valve insert 12, a compression spring 18, acting upon the valve piston a pressure force acting in the closing direction, and a single piece adjusting shim (larger diameter portion of 14) disposed (slidably supported in a cup shaped recess in the valve insert 12) between the valve piston and the compression spring 18 such that the compression spring 18 is braced on one end on a bottom piece of the valve holder 21 and on the other on a face of the adjusting shim 14 facing away from the valve piston, wherein the valve holder 20 is cup-shaped and has at least two subregions, each with a different inside diameter, wherein the valve piston has an end surface and a outer cylindrical surface. Hirota et al. discloses the valve holder 20 having a step like transition which holds the adjusting shim 14 within the cup-shaped recess formed by the valve insert 12. Hirota et al. discloses the first subregion of smaller diameter receiving the valve spring 18. Hirota et al. discloses a fluid passable recess eccentrically disposed in the adjusting shim (between legs 14d) and an outflow conduit 22 in the valve holder.

Hirota et al. fails to disclose a valve holder comprising two subregions that merge with one another in steplike fashion. Cadman et al (Fig. 2) teaches a valve comprising a single piece valve holder 33, a single piece valve insert 30 screwed to the valve holder 33, a valve piston 48 supported slidably in the valve insert 30, a compression spring 50, acting upon the valve piston 48 with a pressure force acting in the closing direction, and an adjusting shim 47 disposed between the valve piston 48 and the compression spring 50 such that the compression spring

50 is braced on one end on a bottom piece of the valve holder 33 and on the other on a face of the adjusting shim 47 facing away from the valve piston 48 wherein the valve holder 33 is cup-shaped and has at least two subregions, the first subregion 35 with smaller diameter receiving the valve spring 50, and the subregions merge with one another in steplike fashion, and wherein the steplike transition of the valve holder 33 formed by the different diameter regions is seated on the valve insert 30 such that the valve insert 30 is received in second subregion of the valve holder 33 which embraces and surrounds a portion of the valve insert 30 for establishing the connection between the valve insert 30 and the valve holder 33. Cadman et al teaches an outflow opening 34 in the holder 33. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the valve disclosed by Hirota et al with a valve holder having a steplike subregions receiving the valve insert as taught by Cadman et al as an art-recognized equivalent substitute valve housing assembly. Hirota et al. discloses grooves (spaces between 14c) on the outer cylindrical surface of the piston and a central bore extending over only a portion of the length of the valve piston (portion of 14 sliding within the smaller diameter portion of 12) for fluid flow fails to disclose flat places on the outer cylindrical surface of the piston. Fountain-Barber (fig. 1-5) teaches a pressure limiting valve comprising a valve piston 3 having four flat paces 14 (extending longitudinally in axial direction) provided uniformly over the outer cylindrical circumference 15 of the piston. It would have been obvious to a person having ordinary skill in the art

at the time of the invention to have provided the valve disclosed by Hirota et al with a valve piston having flat places inserted into a fluid passage portion of valve insert as taught by Fountain-Barber as an art-recognized equivalent substitute fluid passage opening mechanism.

Hirota et al. as modified by Fountain-Barber fails to disclose three flat places. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided three flat surfaces on the piston disclosed by Hirota et al. as modified by Fountain-Barber, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

5. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirota et al (US Pat 6314753) in view of Cadman et al. (US Patent 2498482) and Fountain-Barber (US Patent 3199533) further in view of Lauer et al (US Patent 6523913).

6. Hirota et al fails to disclose valve parts joined together by caulking. Lauer et al (fig. 1, col 2, line 48), teaches a pressure control valve comprising a valve holder 14 and a valve insert joined together by caulking. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the valve disclosed by Hirota et al with caulking as a joining method as taught by Lauer et al as an art-recognized equivalent substitute method of valve assembly.

7. Claims 32 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirota et al (US Pat 6314753) in view of Cadman et al. (US Patent 2498482) and Fountain-Barber (US Patent 3199533) further in view of Jay et al (US Patent 2672881).

8. Regarding claim 32, Hirota et al as modified fails to disclose flat places at an angle relative to the axis. Jay et al (fig. 3) teaches a pressure limiting valve comprising a valve holder 14, 15, a valve insert 10 connected to valve holder, a single piece piston 26, a compression spring 28 acting upon the piston 26 through a single piece adjusting shim 25. Jay et al teaches two flat places uniformly distributed over the circumference of the piston and oriented at angle relative to the axis of the valve. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the valve disclosed by Hirota et al as modified with flat places at an angle relative to the axis as taught by Jay et al in order to gradually increase the flow area to increase the flow with increasing inlet pressure.

9. Regarding claim 38, Hirota et al fails to disclose outflow conduit in the valve insert. Jay et al (fig. 3) teaches a pressure limiting valve comprising a valve holder 14, 15, a valve insert 10 connected to valve holder, a single piece piston 26, a compression spring 28 acting upon the piston 26 through a single piece adjusting shim 25. Jay et al teaches an outlet 22 provided in the valve insert. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the valve disclosed by Hirota et al as modified with outflow conduit in the valve insert as taught by Jay et al as an art-recognized equivalent substitute location of the outlet conduit.

10. Claims 27, 39, 41, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirota et al (US Pat 6314753) in view of Cadman et al. (US Patent

2498482) and Fountain-Barber (US Patent 3199533) further in view of Yie (US Patent 5241986).

11. Regarding claim 27, Hirota et al fails to disclose the valve holder and insert screwed together. Yie teaches a pressure relief valve 10 comprising a piston 15 having a piston rod 17 protruding into the cup shaped recess of valve holder 11 screwed to a valve insert 12. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the valve disclosed by Hirota et al with a threaded connection as a joining method as taught by Yie as an art-recognized equivalent substitute method of valve assembly.

12. Regarding claims 39, 41, 42, Hirota et al fails to disclose a piston rod. Yie teaches a pressure relief valve 10 comprising a piston 15 having a piston rod 17 protruding into the cup shaped recess of valve holder 11 and surrounded by a spring 22 such that the adjusting shim 18 is slipped onto the piston rod 17 and rests on a steplike seat. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the valve disclosed by Hirota et al with a piston rod as taught by Yie in order to help align the piston and the spring.

13. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirota et al (US Pat 6314753) in view of Cadman et al. (US Patent 2498482) and Fountain-Barber (US Patent 3199533) further in view of LINDEBOOM (US Patent 3346009).

14. Hirota et al fails to disclose a conical spring. LINDEBOOM (fig. 1) teaches a pressure actuated valve comprising a piston operated by a conical spring. It would have been obvious to a person having ordinary skill in the art at the time of the invention

to have provided the valve disclosed by Hirota et al with a conical spring as taught by LINDEBOOM as an art-recognized equivalent substitute biasing mechanism.

15. Claims 37 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirota et al (US Pat 6314753) in view of Cadman et al. (US Patent 2498482) and Fountain-Barber (US Patent 3199533) further in view of Platt et al (US Patent 4413646).

16. Hirota et al fails to disclose an outflow conduit at an oblique angle to the longitudinal axis. Platt et al teaches a valve comprising a valve holder housing having an oblique outlet in the valve older housing to reduce erosion of the valve surface. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the valve disclosed by Hirota et al with an oblique outlet as taught by Platt et al in order to reduce erosion of the valve surface.

Response to Arguments

1. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection. Hirota et al. has been cited to show prior art disclosure of a valve having single piece valve holder, insert and piston.

2. Applicant's arguments filed 06/16/2010 have been fully considered but they are not persuasive. Applicant’s argument that the cited prior art does not teach a subregion of valve holder embracing the valve insert from outside and surrounding a portion of valve insert for establishing a connection is not persuasive since Cadman et al. was cited to show incorporation of the claimed structure. Cadman et al (Fig. 2) teaches a valve wherein the valve holder 33 is cup-shaped and has at least two subregions, the first subregion 35 with smaller diameter receiving the valve spring 50, and the

subregions merge with one another in steplike fashion, and wherein the steplike transition of the valve holder 33 formed by the different diameter regions is seated on the valve insert 30 such that the valve insert 30 is received in second subregion of the valve holder 33 which embraces and surrounds a portion of the valve insert 30 for establishing the connection between the valve insert 30 and the valve holder 33.

3. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Hence, Applicant's argument that Fountain-Barber does not teach flat places only a portion of the valve piston is not persuasive since the primary reference Hirota et al. discloses the fluid passages in the valve piston extending only on a portion of the valve piston.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ATIF H. CHAUDRY whose telephone number is (571)270-3768. The examiner can normally be reached on Mon-Fri Alternate Friday off 9-5 EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571)272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Atif H Chaudry/
Examiner, Art Unit 3753

/Robin O. Evans/
Supervisory Patent Examiner, Art Unit 3753